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AMENDMENTS

TECH CENTER 1600/2900

In the Specification:

Page 10, line 13, please delete "stand" and substitute therefor --strand--.

In the Claims:

Please delete claims 1-9, 18-19 and 29-30.

Please add the following new claims:

--39. A method for identifying a DNA molecule, comprising:

(a) contacting the DNA molecule with a labeled reference DNA strand under conditions such that the reference strand hybridizes to a complementary strand of the DNA molecule so as to form a test duplex;

(b) running the test duplex and at least one control duplex in a gel by electrophoresis, wherein the gel contains a denaturing reagent or is run under a heated condition; and

(c) comparing the position of the test duplex on the gel with the position of the at least one control duplex to identify the DNA molecule.

40. The method of claim 39, wherein the DNA molecule is an HLA gene.

41. A method for identifying a DNA molecule, comprising:

(a) contacting the DNA molecule with a labeled reference DNA strand under conditions such that the reference strand hybridizes to a complementary strand of the DNA molecule so as to form a test duplex;

(b) running the test duplex and at least one control duplex in a gel by electrophoresis;

(c) comparing the position of the test duplex on the gel with the position of the at least one control duplex; and

(d) repeating steps (a)-(c) one or more times wherein a different allelic reference strand is used in each repeat to identify the DNA molecule.

42. The method of claim 41, wherein the gel contains a denaturing reagent or is run under a heated condition.

43. The method of claim 41, wherein the DNA molecule is an HLA gene.

44. A method for identifying a DNA molecule, comprising:

(a) contacting the DNA molecule with a labeled reference DNA strand under conditions such that the reference strand hybridizes to a complementary strand of the DNA molecule so as to form a test duplex; and

(b) running the test duplex and two or more control duplexes in a gel by electrophoresis, wherein the control duplexes are either (a) duplexes which have faster and slower mobility than the test duplex and which are run in the same lane on the gel as the test duplex or (b) duplexes which have graded mobilities and which are run in a different lane on the gel as the test duplex to identify the DNA molecule.

45. The method of claim 44, further comprising comparing the position of the test duplex on the gel with the position of the two or more control duplexes.

46. The method of claim 44, wherein the labeled reference DNA strand is labeled with a fluorescent ligand or a compound that allows an enzyme molecule to be attached to the reference DNA strand.

47. The method of claim 44, further comprising comparing the position of the test duplex with a database of values.

48. The method of claim 44, wherein the DNA molecule is an HLA gene.

49. A method for determining whether two individuals have corresponding alleles, comprising:

- B cont*
- (a) amplifying the alleles of a first individual employing a pair of primers in which one of the primers carries a ligand, so as to produce amplified double-stranded alleles of the first individual in which one of the strands carries a ligand;
 - (b) contacting the amplified double-stranded alleles with a receptor on a solid support under conditions such that the ligand binds to the receptor;
 - (c) separating the double-stranded alleles into single-strands and removing the strands that are not bound to the support by the ligand;
 - (d) recovering the remaining strands from the support;
 - (e) mixing the recovered strands with complementary strands of the alleles of the second individual so as to form test duplexes;
 - (f) separating the test duplexes; and
 - (g) analyzing the test duplexes to determine whether the alleles of the gene from the first individual correspond with the alleles of the second individual.

50. The method according to claim 49, wherein the first individual and the second individual are selected in a mutually exclusive manner from the group consisting of a prospective tissue donor and a prospective tissue recipient.

51. The method of claim 50, wherein the method is used to determine paternity.

52. The method of claim 49, further comprising sequencing the test duplexes, performing sequence specific primer amplification analysis on the test duplexes, or performing sequence specific oligonucleotide analysis on the test duplexes.